REMARKS

Claims 1-61 were presented for examination and were pending in this application. In an Official Action dated May 2, 2007, claims 1-61 were rejected.

Independent claims 1, 15, 28, 40, and 53 are amended herein, and claims 2, 16, 29, and 41 are canceled herein without prejudice or disclaimer. No new matter is added by this amendment.

Based on the above Amendment and the following Remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections, and withdraw them.

Rejections under 35 USC §102

In paragraph 1 of the Office Action, claims 1-6, 8, 10-11, 15-19, 21, 23-24, 28-32, 34, 36, 40-46, 48-49, 53-56, 58, and 60 were rejected under 35 U.S.C. §102(e) as being anticipated by Cooper et al. (US Patent No. 6,757, 362). This rejection is traversed.

Independent claims 1, 15, and 53 variously recite:

"… obtaining utterance parameters comprises:

… partitioning the utterance into segments; and

… assigning one of a plurality of classifications to each segment, each classification corresponding to at least one of a plurality of states of the user."

Similarly, independent claims 28, 40 variously recite:

"…the signal processing module obtains the utterance parameters by:

partitioning the utterance into segments; and

assigning one of a plurality of classifications to each segment, each classification corresponding to at least one of a plurality of states of the user."

The inventions of claims 1, 15, 28, 40, and 53 obtain utterance parameters that indicate the state of the user, by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user. A segment may be each phrase in the utterance with a minimum number of phonemes, and the starting and ending points of a segment may be determined by detecting a pause, a silence or sudden change in the utterance. It is to each such segment of the utterance to which a classification indicating one of a plurality of states of a user (for example, truth, stress, excitement, unsure, very stressed, voice control, etc.) is assigned. Alternatively, the segments may correspond to words and pauses in the utterance and each word may be assigned a classification of a general word and a particular type of emotionally sensitive word based on speech recognition.

The specification illustrates various embodiments of this claim limitation. For example, see pages 8-9 (paragraphs [0021] – [0023] of the specification, which state:

> "[0021] Referring to FIG. 2, in step 106 the utterance is partitioned 202 into segments. A segment is each phrase in the utterance with a minimum number of phonemes. The starting and ending points of a segment may be determined by detecting a pause, a silence or a sudden change in the utterance. The length of each segment may be uniform or non-uniform.
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> [0022] In one embodiment, each segment is assigned 204 a classification indicating one of a plurality of states of a user. For example, the classifications may include P1 (truth), P2 (stress), P3 (excitement), P4 (unsure), P5 (very stressed), P6 (voice control), P7 (tense), P8 (very tense), P9 (inaccurate), PA (implausible), PB (deceiving), PC (speech speed), PD (pause ratio), PE (clearness), PF (drowsy), PG (tired), PH (hesitation), PI (variance of the pitch during a segment), PJ (difference in pitch from one segment to the

next segment), and PK (shape of the frequency spectrum in the segment). The assignment of these classifications to the segments of the utterance may be carried out by various lie detection software that is commercially available. The correspondence of particular emotional parameters to the certain types of segments of the utterance is determined empirically by inducing a certain type of emotion on a user, inducing an utterance from the user, analyzing the segments of the utterance, and statistically mapping the segments of the utterance to the type of induced emotional state of the user. Some of these parameters may vary together and thus may be grouped to reduce the number of utterance parameters. For example, PC (speech speed) and PD (pause ratio) may be grouped together.

[0023] In another embodiment, the segments may correspond to words and pauses in the utterance and each word may be assigned a classification of a general word and a particular type of emotionally sensitive word based on speech recognition. For example, in the utterance "Uhh, find a gas station," a classification such as "frustration word" may be assigned to "Uhh" and the classification "general word" may be assigned to the remaining words "find a gas station." For another example, in the utterance "Find me …[pause] a gas station nearby, a classification such as "at ease" or "pause" may be assigned to the [pause] in the utterance and the classification "general words" may be assigned to the remaining words "Oh find me a gas station nearby."

Cooper does not disclose or suggest obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, as variously recited in independent claims 1, 15, 28, 40, and 53. Cooper merely discloses inputting user information into the virtual assistant, where the information could be information about the user's emotion based on information about the

user's voice volume, word choice, and speech rate. *See Cooper, col. 43, lines 62-65.* However, there is absolutely no disclosure or suggestion in Cooper at all about how such user's emotion is determined based on the user's speech. Cooper does not even mention partitioning the user's utterance into segments, where each segment is assigned a classification indicating one of a plurality of emotional states of a user (for example, P1 (truth), P2 (stress), P3 (excitement), P4 (unsure), P5 (very stressed), etc.).

Indeed, the Office Action appears to admit that Cooper does not disclose obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, because the office action states that such limitation is "inherent" in processing the user's spoken utterance. *See page 3 of the Office Action.* However, applicants respectfully disagree.

The Examiner merely points to the fact that a speech recognition engine is disclosed in col. 61, lines 34-35 of Cooper as the basis for inherent disclosure of this limitation. However, col. 61, lines 34-35 of Cooper merely states, "Alternatively, a user could select to enter a choice prompt mode where only specific voice commands, such as "yes" and "no" would be interpreted by the speech recognition engine." Such statement in Cooper does not make inherent the claim limitation of obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user. Processing the user's speech or performing speech recognition as in Cooper does not necessarily mean that classifications corresponding to the states of the user are assigned to segments of the speech. The task of speech recognition has nothing to

do with assigning classifications to segments of the speech, and speech recognition can certainly be performed without assigning such classifications to segments of the speech. There is no reason for speech recognition to be necessarily accompanied by assigning such classifications corresponding to the user's states to the segments of the speech. See MPEP 2112 for the Requirements of a Rejection Based on Inherency:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.).

The Office Action does not offer any rationale, evidence, basis in fact, or technical reasoning to reasonably support that obtaining utterance parameters indicating the state of the user by partitioning the utterance into segments and assigning one of a plurality of

classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, is inherent in the general disclosure of a speech recognition engine in Cooper. Such inherency rejection without technical reasoning is improper. Again, see MPEP 2112 on Requirements of Rejection based on Inherency:

> "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

Therefore, it is respectfully submitted that the inventions of independent claims 1, 15, 28, 40, and 53 are patentably distinct from Cooper. The Examiner is respectfully requested to withdraw the rejections of claims 1, 15, 28, 40, and 53.

Claims 2-6, 8, 10-11, 16-19, 21, 23-24, 29-32, 34, 36, 41-46, 48-49, 54-56, 58, and 60 are dependent directly or indirectly from independent claims 1, 15, 28, 40, or 53. Thus, all

arguments set forth above regarding claims 1, 15, 28, 40, or 53 with regard to Cooper is equally applicable to these dependent claims 2-6, 8, 10-11, 16-19, 21, 23-24, 29-32, 34, 36, 41-46, 48-49, 54-56, 58, and 60. Thus, claims 2-6, 8, 10-11, 16-19, 21, 23-24, 29-32, 34, 36, 41-46, 48-49, 54-56, 58, and 60 are also patentably distinct from Cooper for at least the same reasons as set forth above for independent claims 1, 15, 28, 40, or 53. In addition, the Office Action rejects most of these dependent claims based on allegedly inherent disclosure in Cooper without offering any rationale, evidence, basis in fact, or technical reasoning supporting such inherency, which is an improper rejection. See MPEP 2112.

Rejections under 35 USC §103

In paragraph 2 of the Office Action, claims 7, 9, 20, 22, 33, 35, 47, 57, and 59 were rejected as being unpatentable over Cooper in view of Pelland (US Patent Application Publication No. 2002/0029203). This rejection is traversed.

As explained above, Cooper fails to disclose or suggest obtaining utterance parameters indicating the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, as recited in independent claims 1, 15, 28, 40, or 53 from which claims 7, 9, 20, 22, 33, 35, 47, 57, and 59 depend.

In addition, Pelland also fails to disclose or suggest obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, as variously recited in independent claims 1, 15, 28, 40, or 53 from which claims 7, 9, 20, 22, 33, 35, 47, 57, and 59 depend. Pelland was

relied on by the Examiner merely for the alleged disclosure of adjusting the tone or gender, but has nothing to do with assigning one of a plurality of classifications to each segment of the utterance, where each classification corresponds to at least one of a plurality of states of the user.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. See MPEP §2143.03. The deficient disclosures of Cooper and Pelland preclude establishing even a *prima facie* basis from which a proper determination of obviousness of claims 7, 9, 20, 22, 33, 35, 47, 57, and 59 can be made. Therefore, it is respectfully submitted that the inventions of claims 7, 9, 20, 22, 33, 35, 47, 57, and 59 are also patentably distinct from Cooper and Pelland.

Claims 12-14, 25-27, 37-39, 50-52, and 61 were rejected as being unpatentable over Cooper in view of Millie et al. ("Driver-Friendly Assistance System Interface"). This rejection is traversed.

As explained above, Cooper fails to disclose or suggest obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least one of a plurality of states of the user, as variously recited in independent claims 1, 15, 28, 40, or 53 from which claims 12-14, 25-27, 37-39, 50-52, and 61 depend directly or indirectly.

In addition, Millie also fails to disclose or suggest obtaining utterance parameters that indicate the state of the user by partitioning the utterance into segments and assigning one of a plurality of classifications to each segment, where each classification corresponds to at least

one of a plurality of states of the user, as variously recited in independent claims 1, 15, 28, 40, or 53 from which claims 12-14, 25-27, 37-39, 50-52, and 61 depend directly or indirectly. Millie was relied on by the Examiner merely for the alleged disclosure of an on-board computer used in an automobile or navigation system, but has nothing to do with assigning one of a plurality of classifications to each segment of the utterance, where each classification corresponds to at least one of a plurality of states of the user.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. See MPEP §2143.03. The deficient disclosures of Cooper and Millie preclude establishing even a *prima facie* basis from which a proper determination of obviousness of claims 12-14, 25-27, 37-39, 50-52, and 61can be made. Therefore, it is respectfully submitted that the inventions of claims 12-14, 25-27, 37-39, 50-52, and 61are also patentably distinct from Cooper and Millie.

Conclusion

In summary, it is respectfully submitted that all pending claims 1, 3-15, 17-28, 30-40, and 42-61 are in condition for allowance. Favorable action is solicited.

Respectfully Submitted,
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